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LISTS OF SPECIES

Polychaetes of the North-Central Santa Catarina state, Brazil

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ABSTRACT: A preliminary checklist of polychaete species from the inner shelf of Santa Catarina state (S Brazil) is presented, based on material collected between 26°18' S – 27°18' S, in depths ranging from 5 to 15 m. The checklist comprises 46 species belonging to 18 families. *Sigambra pettiboneae* (Hartman-Schröeder, 1979) is newly reported for the Brazilian coast. *Mediomastus californiensis* Hartman, 1944, *Ninoe brasiliensis* Kinberg, 1865, *Neanthes bruaca* Lana and Sovierzoski, 1987 and *Paraprionospio pinnata* (Ehlers, 1901) occurred in all samples. The distribution range of 22 other species was extended to the Santa Catarina coast.

INTRODUCTION

Polychaetes are among the most abundant groups in benthic samples, and may correspond to more than 2/3 of benthic associations (Rouse and Pleijel 2006), exhibiting a diversity of body morphologies and feeding strategies (Glasby 2005; Rouse and Pleijel 2001).

In southern Brazil there are relevant taxonomic works at Paraná (Lana *et al*. 2006) and Rio Grande do Sul states (Orensanz and Gianuca 1974). However, no taxonomic surveys of polychaetes were carried out along the coast of the state of Santa Catarina. The only available records were provided in ecological works in coastal (Pagliosa 2006; Vivan *et al*. 2009) and shelf break areas (Rullier and Amoureux 1979; Rohr and Almeida 2006).

This first taxonomic list of Santa Catarina polychaetes provides a preliminary baseline for future taxonomic and ecological research. Species and families reported on this checklist are the result of surveys along the inner continental shelf, from São Francisco do Sul (26°18' S) to Tijucas (27°18' S), between 2001 to 2008. Only organisms identified at specific level are listed.

MATERIALS AND METHODS

Study site

Eleven sublittoral stations were sampled in depths ranging between 2 to 12 m, along a latitudinal gradient of *ca*. 100 km, from São Francisco do Sul (26°18' S) to Tijucas cities or stations (27°18' S) (Figure 1).

Each station is represented by a letter: A- São Francisco do Sul, B- Gravatá, C- North Navegantes, D- South Navegantes, E- Atalaia beach, F- Brava beach, G- North Balneário Camboriú, H- South Balneário Camboriú, I- Laranjeiras beach, J- Porto Belo, K- Tijucas (Figure 1). The stations represent sites or regions with distinct wave exposure degree. Station A, located on São Francisco do Sul was an exposed site, composed of fine and very fine sand, moderately selected. The region between Gravatá (station B) and Laranjeiras (station I) exhibited poorly selected silt and clay, while Porto Belo (station J) presented well selected coarse sediments (Almeida *et al*. 2004). Tijucas bay (station K) was composed by muddy sediments.

Sampling

Biological samples were obtained with a 0.025 m^2 and 0.042 m^2 Van-Veen grab and a 0.018 m^2 PVC corer. A total of 777 samples were collected from 2001 to 2008.

At least 30 samples from each station were analyzed. Samples were fixed in 4% formaldehyde and washed in

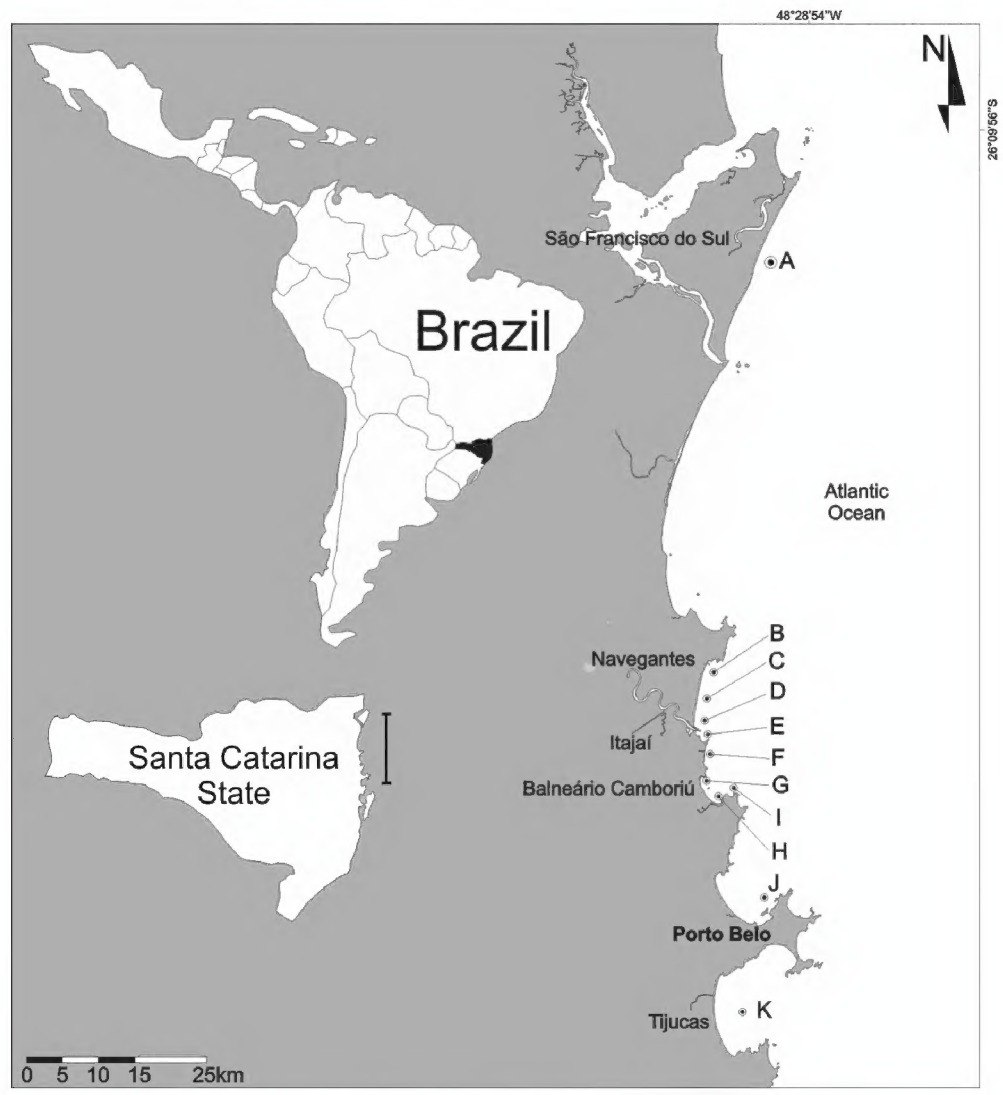

FIGURE 1. Map of Santa Catarina north-central coast and the sampling stations. A- São Francisco do Sul, B- Gravatá, C- North Navegantes, D- South Navegantes, E- Atalaia beach, F- Brava beach, G- North Balneário Camboriú, H- South Balneário Camboriú, I- Laranjeiras beach, J- Porto Belo, K- Tijucas. The line in front of Santa Catarina coast indicates the study area.

0.5 mm mesh size; retained polychaetes were counted and identified from specific literature.

Voucher specimens were deposited at the Instituto de Biologia da Universidade Federal do Rio de Janeiro (IBUFRJ), Rio de Janeiro, RJ. Deposit numbers are provided for each species.

Results and Discussion

A total of 9,739 polychaetes were collected, distributed in 127 morphotypes reported to 33 families. Forty-six species, distributed in 18 families (Table 1), were formally identified. Organisms belonging to the families Oweniidae, Cirratulidae, Syllidae, Flabelligeridae, Cossuridae Hesionidae, Maldanidae, Pectinariidae, Pholoididae, Phyllodocidae, Sabellaridae, Scalibregmatidae, Terebellidae and Trichobranchidae were not identified to species level.

The species *Mediomastus californiensis* Hartman, 1944, *Ninoe brasiliensis* Kinberg, 1865, *Magelona posterelongata* Bolivar and Lana, 1986, *Neanthes bruaca* Lana and Sovierzoski, 1987 and *Paraprionospio pinnata* (Ehlers, 1901) occurred in all sampled sites.

Hemipodia simplex (Grube, 1857), *Gymnonereis crosslandi* (Monro, 1933), *Nephtys squamosa* (Ehlers,

Table 1. List of polychaetes species and their regional distribution along the Santa Catarina north-central coast. Letters correspond to the species occurrence at sampling stations as indicated in Figure 1.

DEPOSIT NUMBER	FAMILY	SPECIES	OCCURRENCE
IBUFRJ-1110	Ampharetidae	*Linopherus ambigua* (Monro, 1933)	J
IBUFRJ-1111		*Isolda pulchella* Müller, 1858	JK
IBUFRJ-1112	Capitellidae	*Capitella* cf. *capitata* (Fabricius, 1740)	DJ
IBUFRJ-1113		*Heteromastus similis* Soutthern, 1921	D
IBUFRJ-1114		*Mediomastus californiensis* Hartman, 1944	ABCDEFGHIJK
IBUFRJ-1115		*Notomastus lobatus* (Hartman, 1947)	ADJK
IBUFRJ-1116	Dorvilleidae	*Schistomeringos rudolphi* (delle Chiaje, 1828)	K
IBUFRJ-1117	Glyceridae	*Hemipodia simplex* (Grube, 1857)	A
IBUFRJ-1118	Goniadidae	*Goniada maculata* Oersted, 1843	BCDEFGHIJK
IBUFRJ-1119		*Goniada littorea* Hartman, 1950	AD
IBUFRJ-1120	Lumbrineridae	*Lumbricalus januarii* (Grube, 1878)	J
IBUFRJ-1121		*Lumbrinereis atlantica* (Kinberg, 1865)	AD
IBUFRJ-1122		*Ninoe brasiliensis* Kinberg, 1865	ABCDEFGHIJK
IBUFRJ-1123	Magelonidae	*Magelona crenulata* Bolivar and Lana, 1986	K
IBUFRJ-1124		*Magelona papillicornis* Müller, 1858	ABCDEFGHIK
IBUFRJ-1125		*Magelona posterolongata* Bolívar and Lana, 1986	ABCDEFGHIJK
IBUFRJ-1126		*Magelona variolamelata* Bolivar and Lana, 1986	ABDEFGHIJK
IBUFRJ-1127		*Magelona riojai* Jones, 1963	D
IBUFRJ-1128	Nereididae	*Gymnonereis crosslandi* (Monro, 1933)	A
IBUFRJ-1129		*Neanthes bruaca* Lana and Sovierzoski, 1987	ABCDEFGHIJK
IBUFRJ-1130		*Alitta succinea* (Frey and Leuckart, 1847)	HI
IBUFRJ-1131	Nephtyidae	*Aglaophamus juvenalis* Kinberg, 1866	J
IBUFRJ-1132		*Inermonephtys brasiliensis* Martin, Gil and Lana, 2009	AD
IBUFRJ-1133		*Nephtys squamosa* (Ehlers, 1887)	A
IBUFRJ-1134	Onuphidae	*Kinbergonuphis difficilis* (Fauchald, 1982)	BCDEFGHI
IBUFRJ-1135		*Kinbergonuphis nonatoi* Lana, 1991	A
IBUFRJ-1136		*Kinbergonuphis orensanzi* (Fauchald, 1982)	K
IBUFRJ-1137		*Onuphis eremita oculata* Hartman, 1951	A
IBUFRJ-1138	Opheliidae	*Armandia hossfeldi* (Hartman-Schroeder, 1956)	AFGHJ
IBUFRJ-1139	Orbiniidae	*Phylo felix* Kinberg, 1866	J
IBUFRJ-1140	Paraonidae	*Cirrophorus branchiatus* (Ehlers, 1908)	BEFGHIJK
IBUFRJ-1141	Pilargidae	*Ancistrosyllis jonesi* Pettibone, 1966	AD
IBUFRJ-1142		*Loandalia ocularis* (Emerson and Fauchald, 1971)	DJ
IBUFRJ-1143		*Hermundura tricuspis* (Müller, 1858)	ADJK
IBUFRJ-1144		*Sigambra pettiboneae* (Hartman-Schroder, 1979)	BCDFGHI
IBUFRJ-1146	Poecilochaetidae	*Poecilochaetus australis* Nonato, 1963	ADHK
IBUFRJ-1147		*Poecilochaetus polycirratus* Santos and Mackie, 2008	J
IBUFRJ-1148	Polynoidae	*Eunoe serrata* Amaral and Nonato, 1982	A
IBUFRJ-1149	Sigalionidae	*Sthenelais limicola* (Ehlers, 1864)	BFHIJ
IBUFRJ-1150	Spionidae	*Dispio remanei* Friedrich, 1956	BCEFGHI
IBUFRJ-1151		*Laonice branchiata* Nonato, Bolivar and Lana, 1986	J
IBUFRJ-1152		*Laonice cirrata* (Sars, 1850)	JK
IBUFRJ-1153		*Paraprionospio pinnata* (Ehlers, 1901)	ABCDEFGHIJK
IBUFRJ-1154		*Prionospio dayi* (Foster, 1969)	ADHIK
IBUFRJ-1155		*Prionospio steenstrupi* (Malmgren,1867)	CK
IBUFRJ-1156		*Spiophanes bombyx* (Claparede, 1870)	J

1887), *Kinbergonuphis nonatoi* Lana,1991, *Onuphis eremita oculata* Hartman, 1951, and *Eunoe serrata* Amaral and Nonato, 1982 occurred exclusively in the northern sector (São Francisco do Sul) (Station A).

Linopherus ambigua (Monro, 1933), *Isolda pulchella* Muller, 1858, *Lumbricalus januarii* (Grube, 1878), *Magelona crenulata* Bolivar and Lana, 1986, *Aglaophamus juvenalis* Kinberg, 1866, *Kinbergonuphis orensanzi* (Fauchald, 1982), *Phylo felix* Kinberg, 1866, *Poecilochaetus polycirratus* Santos and Mackie, 2008, *Laonice branchiata* Nonato, Bolívar and Lana, 1986, *Laonice cirrata* (Sars, 1850), and *Spiophanes bombyx* (Claparède, 1870) occurred exclusively in southern, in Porto Belo (Station J) and/or Tijucas (Station K) (Table 1).

The central to north coast of Santa Catarina state, is a region considered as part of the Warm Temperate Southwestern Atlantic Province (Spalding *et al.*, 2007). The 46 species identified were the more conspicuous in abundance and frequency, on the other hand 127 morphotypes were recognize representing the biodiversity of the subtidal zone between 5 and 15 meters depth. Twenty-two species, previously known from Rio Grande do Sul to São Paulo states were first recorded in Santa Catarina covering the gap for the south Brazilian coast.

The bottom of the area sampled is formed by sand and mud and has a different geographical orientation that determine a different level of exposure by incident waves that influence the granulometric composition (Klein and Menezes 2001). According to the different bottom type three groups of species were identified. The first was integrated by five species (*M. californiensis, N. brasiliensis, N. bruaca, M. posterolongata* and *P. pinnata*) and corresponds to species that occurred in all stations. Another group formed by seven species (*H. simplex, L. brasiliensis, G. crosslandi, N. squamosa, K. nonatoi, Onuphis eremita oculata,* and *E. serrata*) represents the sandy bottom found on the extreme north station (A). The third and last group represented the muddy bottom in the stations from the bays (J and K) and were composed by 12 species (*L. ambigua, I. pulchella, S.* cf. *rudolphi, L. januarii, M. crenulata, A. juvenalis, K. orensanzi, P. felix, P. polycirratus, L. branquiata, L. branquiata,* and *S. bombyx*).

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